

informative than PSA test and to elaborate an efficient method of treating, like gene therapy. Another important observation showed that disease prevails among men after 60 years old and more rarely is found among men with 50 and less years old. It means that age is one of the risk factors, which should be examined among men, as well as other factors like human race, family history or diet.

**Key words:** Prostate cancer, gene, PSA, prevetion.

## 290. ANGIOGENESIS OF ATHEROSCLEROTIC PLAQUE

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**Introduction:** Atherosclerosis is considered a multifactorial disease with many risk factors: smoking, abuse of alcohol, diabetes, hypertension, dyslipidemia and infection with microorganisms. During angiogenesis in atherosclerotic plaque occurs formation of new vessels to maintain the supply of oxygen and nutrients to the cells of the vascular wall. The growth of new vessel that occurs in the regions of atherosclerotic plaque lesions in course of remodeling is considered predisposal factor to plaque rupture.

**Materials and Methods:** We used morphological analysis and immunohistochemistry to investigate the expression of CD34, SMA (actin smooth muscle cells) and CD105- positive in affected vessels of large caliber (aorta, carotid) and medium (cerebral arteries, coronary) taken during necropsies of deceased patients from atherosclerotic complications and / or metabolic syndrome. In this study we included 17 fragments of human aorta with calcined fibrous plaques, 15 carotid artery with less pronounced morphological stenosis, 13 middle cerebral arteries. The morphology of plaques was evaluated on serial sections stained with hematoxylin-eosin and analyzed on optical microscopy. The following antibodies were used for immunohistochemistry: SMA (smooth muscle actin), CD34, CD105.

**Results:** At the intimate, most vessels in the region of atherosclerotic plaque were CD34 positive, at level of fibrous plaque - often, and at adventitia, namely vasa- vasorum were positive for CD34 in small and medium vessels. SMA marker is detected in smooth muscle cells, myofibroblasts, myoepithelial cells and less in pericytes. In the region of plaque and its adjacent areas, adventitia and intimate, CD105 vessel density was higher, and in distant regions of atherosclerotic lesion decreased their density.

**Conclusion:** The role of angiogenesis in atherosclerosis is more complex and depends on the stage of pathological process. Our results show that the method of immunohistochemical with application of specific vascular markers, demonstrates important pathogenetic aspects in atherosclerotic plaque formation. In the development of atherosclerotic plaques and in the process of angiogenesis have an important role mast cells and macrophages together with other immunocompetent cells.

**Keywords:** angiogenesis, atherosclerosis, atherosclerotic plaque, SMA, CD34, CD105